

TECHNICAL MEMORANDUM

City of Alexandria Storm Sewer Capacity Analysis

Task Order 2D – Heavy Cleaning & CCTV (N. Beauregard St)

Storm Pipe Segment: 001316STMP

PREPARED FOR: CH2M HILL
PREPARED BY: Baker
DATE: August 7, 2012

Field Work Summary (July 6, 2012)

VPS performed heavy cleaning operations within storm pipe 001316STMP, the 57-inch diameter gravity main located on North Beauregard Street near the intersection with Larchmont Avenue. This segment is 130 feet long and extends from upstream manhole 000391SMH to downstream manhole 000392SMH. Large pieces of concrete and metal debris were removed by VPS personnel operating inside the pipe with a confined space permit. A post-cleaning CCTV inspection followed to inspect the pipe for defects. See Appendix A for the condition report from VPS.

VPS had previously attempted an inspection on this line on February 24, 2012. The inspection of storm pipe 001316STMP was abandoned because the CCTV camera rig was unable to pass the large debris. See Appendix B for images of the debris inside the pipe.

During a separate part of this Task Order, VPS performed manhole inspections at the upstream and downstream structures of this line (000391SMH and 000392SMH). The field reports are included as Appendix C.

Condition Assessment Summary

VPS inspected 130 linear feet of 57-inch diameter tar-lined corrugated metal pipe. No significant structural defects were observed in the pipe; small amounts of sand and gravel were observed embedded in the tar lining.

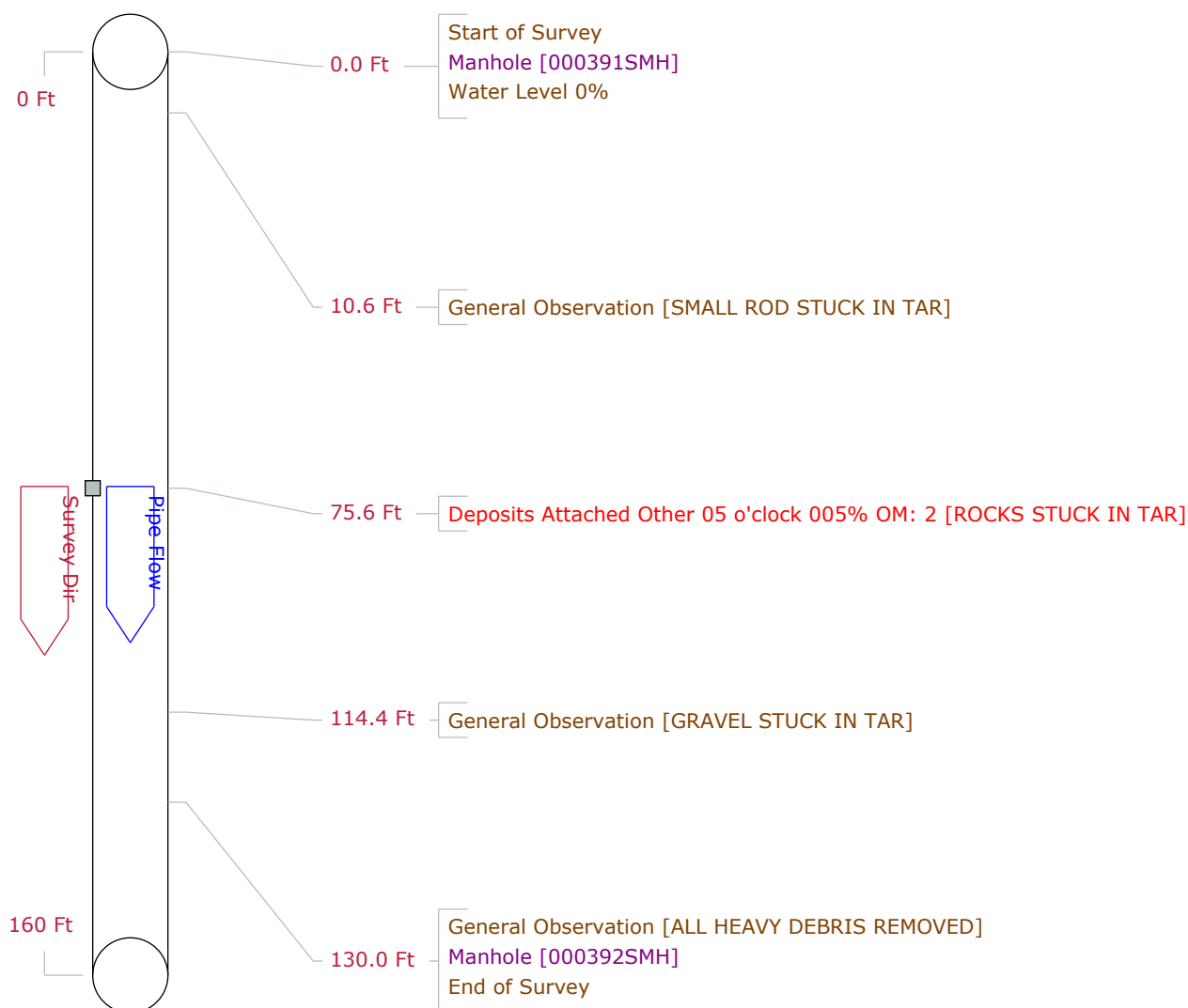
At the downstream end of the subject line (just beyond manhole 000392SMH) there is a 6-inch diameter pipe apparatus, believed to be abandoned, affixed to the bottom of the storm pipe. The original function of the 6-inch pipe is not known. The included images (Appendix D) display the location and orientation of the pipe. VPS reported that the pipe is fused to the bottom of the storm sewer pipe with cement mortar and was unable to separate the two pipes for removal. Regular maintenance and cleaning is essential to eliminate the potential of debris accumulation at this location.

APPENDIX A

**VIDEO PIPE SERVICES CCTV REPORT
000391SMH TO 000392SMH
JULY 6, 2012**

Pipe Graphic Report of PSR 000391SMH X for CH2M HILL

Setup 1	Surveyor SMU	Certificate # U-809-9223	System Owner CITY OF ALEXANDRIA
Drainage ALEXANDRIA	Survey Customer CH2M HILL		
P/O #	Date 2012/07/06	Time 7:48	Street N. BEAUREGARD ST.
City ALEXANDRIA	Further location details N. BEAUREGARD ST. & KING ST.		
Start 000391SMH	Rim to invert 13.50	Grade to invert	Rim to grade Ft
Finish 000392SMH	Rim to invert 14.00	Grade to invert	Rim to grade Ft
Use Stormwater	Direction Downstream	Flow control Not Controlled	Media No CH2M-7-6
Shape Circular	Height 57	Width ins	Preclean H Year Cleaned 2012/07/06
Material Corrugated Metal Pipe	Joint length 10.0 Ft	Total length 160.0 Ft	Length Surveyed 130.00
Lining	Year laid	Year rehabilitated	Weather Dry
Purpose Maintenance Related	Cat		
Additional info HEAVY CLEANED FOR DEBRIS		Structural	O&M Constructional
Location Light Highway		Miscellaneous	Hydraulic
Project BEAUREGARD ST. ALEXANDRIA	Work Order		
Northing	Easting	Elevation	
Coordinate System	GPS Accuracy		



CCTV Surveys List for CH2M HILL

Number of surveys in this list is 1 as of Monday, July 23, 2012 Unit of measure: ft

Setup	Date	Street	Start MH	Finish MH	Dir	Size inch	Pre Clean	Media Number	Scheduled Length	Surveyed Length
1	7/6/2012	N. BEAUREGARD ST.	000391SMH	000392SMH	D	57	H	CH2M-7-6	160.0	130.0
Total Scheduled Length									160.0	
Total Length Surveyed										130.0

APPENDIX B

**SNAPSHOTS FROM CCTV INSPECTION ON FEBRUARY 24, 2012
IMAGES OF HEAVY DEBRIS INSIDE PIPE**

N BEAURAGARD ST

From: 2

To: 3

18'05"

02.13.2012

N BEAURAGARD ST

From: 2

To: 3

28' 00"

02.13.2012

N BEAURAGARD ST

From: 2

To: 3

28'05"

02.13.2012

APPENDIX C

**MANHOLE INSPECTION REPORTS
FOR 000391SMH AND 000392SMH**

Alexandria Manhole and Lamping Inspection Form

Basin No. **FOUR MILE RUN**

Manhole N **000391SMH**

Inspection Information

Insp Date/Time **3/12/2012**
 Crew **Truck 1**
 Crew Affiliation **Field1**
 Permit No **V08093003**
 Insp Purpose **Routine assessment/asse**
 Inspection Type **Surface Inspection**
 Why not Inspected

Owner Information

Project No.
 Project No. 2
 Project Name
 Map No
 Use of Sewer **Stormwater**

Manhole Information

Structure Type **Manhole Standard**
 Coating/Liner Type **None - No Coating/Lining**
 Address **3400**
 City, State, Zip **N BEAUREGARD ST Alexandria,VA 00000**
 Location Code **Light Highway Rural Street**
 X **11879173.8** Y **6992415.294**
 Elevation **140.79**
 Grade (0, +, -,)
 Flow Type
 DS pipe length(ft)
 Depth to MH Invert(ft) **13.7**
 Pre-cleaning **No Pre-Cleaning**

☒ Complete ☐ Quick ☐ Incomplete ☐ Returned

Inspection Setting Information

MH Surface Type **Asphalt**
 Traffic Volume **Medium/Fair**
 Traffic Type **3 - 4 Lane**
 Weather **Dry**
 Ground Cond **Dry**

Manhole-Upper

Corrosion deterioration widespread ☒ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4
 Coating/lining deterioration ☒

Manhole-Lower

Corrosion deterioration widespread ☒ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4
 Coating/lining deterioration ☒

Cover / Adjustment Ring / Cover Insert

☐ No Cover ☒ No Cover Insert
☒ No Cover Gasket ☒ No Cover Adjustment Ring

Cover Type **Solid**
 Cover material **Cast Iron**

Cover Diam(ft) **24**
 Cover Width(ft)
 Cover Thickness(in) **3.25**
 No of vent holes **2**
 Avg vent hole dia(in) **1**
 Adj ring height(in)
 Cover bear surf diam/width
 Ponding depth(ft)
 Tributary area(sq ft)

Cover

	0	1	2	3	4
Missing or Displaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cracked / deteriorated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fit in Frame	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surface wear	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missing Bolts or Broken Bolts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Frame and Frame Seal

☐ No Frame ☐ No Frame Base Seal

Frame material **3**
 Frame bearing surf diam(in) **24**
 Frame bearing surf width(in)
 Frame bearing surf dwell(in) **1**
 Frame offset dist(in)
 Frame depth(in) **8**
 Frame seal material **39**
 Clear opening diam(in) **22**
 Clear opening width(in)

Frame cont.

Frame

	0	1	2	3	4
Cracked / broken / deteriorated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missing Bolts or Broken Bolts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offset	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Frame Base Seal

	0	1	2	3	4
Cracked / deteriorated	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chimney (Shaft) / Grade Ring Reducer (Cone, Slab) Chamber (Wall)

☒ No Chimney (Shaft) Seal ☒ No Grade Ring
☐ No Chimney (Shaft) ☒ No Reducer (Cone, Slab)

Material Diam in Width in Depth ft

Chimney **5** **6.8**

Chamber **5** **4.5**

Chimney (Shaft)

	0	1	2	3	4
Previous rehab	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cracked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortar missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bricks displaced or missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collapse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chamber (Wall) cont.

Chamber

	0	1	2	3	4
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortar missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bricks displaced or missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility conduit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Offset or Seal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collapse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lift hole plugs missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bench Steps

Channel (Invert)

☐ No Bench ☒ No Steps
☐ No Channel ☒ No Common MH Partition

Surcharge Depth(ft)

Bench material **Precast Concrete**

Channel material **Precast Concrete**

Bench

	0	1	2	3	4
Cracked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortar missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bricks displaced or missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debris/deposition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Channel

	0	1	2	3	4
Cracked	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortar missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bricks displaced or missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debris/deposition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe segment cracked, spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hydraulic flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Alexandria Manhole and Lamping Inspection Form

Basin No.

FOUR MILE RUN

Manhole N

000391SMH

Notes / Sketch

New	N/A	Basin	Connecting MH	Flow Direction	Pipe Type	In Drop	Ex Drop	Depth	Shape	Matl	Dia												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	FOUR MILE RUN	000185ND	<input checked="" type="checkbox"/> In <input type="checkbox"/> Out	Storm	<input type="checkbox"/>	<input type="checkbox"/>	13.7	Circular	Corrugated Metal	54												
Pipe Seal Condition <table border="1"> <thead> <tr> <th></th> <th>Severity</th> </tr> <tr> <th></th> <th>0 1 2 3 4</th> </tr> </thead> <tbody> <tr> <td>I/I evidence</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Mortar, "boot", or other seal</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Pipe cracked</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Roots Intrusion</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> </tbody> </table>													Severity		0 1 2 3 4	I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Severity																						
	0 1 2 3 4																						
I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
New	N/A	Basin	Connecting MH	Flow Direction	Pipe Type	In Drop	Ex Drop	Depth	Shape	Matl	Dia												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	FOUR MILE RUN	000392SMH	<input type="checkbox"/> In <input checked="" type="checkbox"/> Out	Storm	<input type="checkbox"/>	<input type="checkbox"/>	13.7	Circular	Corrugated Metal	57												
Pipe Seal Condition <table border="1"> <thead> <tr> <th></th> <th>Severity</th> </tr> <tr> <th></th> <th>0 1 2 3 4</th> </tr> </thead> <tbody> <tr> <td>I/I evidence</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Mortar, "boot", or other seal</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Pipe cracked</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Roots Intrusion</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> </tbody> </table>													Severity		0 1 2 3 4	I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Severity																						
	0 1 2 3 4																						
I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						
Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																						

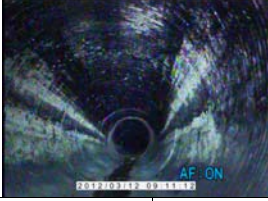


Alexandria Manhole and Lamping Inspection Form

Basin No. **FOUR MILE RUN**

Manhole N **000391SMH**

Photos

Photo Name	Description	PhotoType	Old Photo Name
000391SMH_Cover_20120312_6111.JPG		Cover	0908401J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	
000391SMH_Frame_20120312_6112.JPG		Frame	0909031J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	
000391SMH_Chamber_20120312_6113.JPG		Chamber	0910021J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	
000391SMH_General_20120312_6114.JPG	SIZE OF INCOMING PIPE FROM 000185ND	General	0910501J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	
000391SMH_General_20120312_6115.JPG	INCOMING PIPE FROM 000185ND	General	0910591J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	
000391SMH_General_20120312_6116.JPG	INCOMING PIPE FROM 000185ND	General	0911121J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	
000391SMH_General_20120312_6117.JPG	INCOMING PIPE FROM 000185ND	General	0911201J.JPG
		L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe	


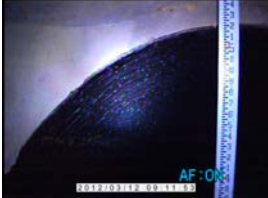




Alexandria Manhole and Lamping Inspection Form

Basin No.

FOUR MILE RUN

Manhole N

000391SMH

000391SMH_General_20120312_6118.JPG	INCOMING PIPE FROM 000185ND	General	0911271J.JPG	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe
				
000391SMH_General_20120312_6119.JPG	SIZE OF OUTGOING PIPE TO 000392SMH	General	0911531J.JPG	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe
				
000391SMH_General_20120312_6120.JPG	OUTGOING PIPE TO 000392SMH	General	0912051J.JPG	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe
				
000391SMH_General_20120312_6121.JPG	OUTGOING PIPE TO 000392SMH	General	0912111J.JPG	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe
				
000391SMH_General_20120312_6122.JPG	OUTGOING PIPE TO 000392SMH	General	0912231J.JPG	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe
				
000391SMH_General_20120312_6123.JPG	OUTGOING PIPE TO 000392SMH	General	0912301J.JPG	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe
				

Alexandria Manhole and Lamping Inspection Form

Basin No. **FOUR MILE RUN**

Manhole N **000392SMH**

Inspection Information

Insp Date/Time **3/9/2012**
 Crew **Truck 1**
 Crew Affiliation **Field1**
 Permit No **V08093003**
 Insp Purpose **Routine assessment/asse**
 Inspection Type **Surface Inspection**
 Why not Inspected

Owner Information

Project No.
 Project No. 2
 Project Name
 Map No
 Use of Sewer **Stormwater**

Manhole Information

Structure Type
 Coating/Liner Type **None - No Coating/Lining**
 Address **4700**
 City, State, Zip **KING ST Alexandria,VA 00000**
 Location Code **Light Highway Rural Street**
 X Y
 Elevation
 Grade (0, +, -, /)
 Flow Type
 DS pipe length(ft)
 Depth to MH Invert(ft) **14.5**
 Pre-cleaning **No Pre-Cleaning**

☒ Complete ☐ Quick ☐ Incomplete ☐ Returned

Inspection Setting Information

MH Surface Type **Asphalt**
 Traffic Volume **Low/Good**
 Traffic Type **3 - 4 Lane**
 Weather **Dry**
 Ground Cond **Dry**

Manhole-Upper

Corrosion deterioration widespread ☒ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4
 Coating/lining deterioration ☒

Manhole-Lower

Corrosion deterioration widespread ☒ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4
 Coating/lining deterioration ☒

Cover / Adjustment Ring / Cover Insert

☐ No Cover ☒ No Cover Insert
☒ No Cover Gasket ☒ No Cover Adjustment Ring

Cover Type **Solid**
 Cover material **Cast Iron**

Cover Diam(ft) **24**
 Cover Width(ft)
 Cover Thickness(in) **3.25**
 No of vent holes **2**
 Avg vent hole dia(in) **1**
 Adj ring height(in)
 Cover bear surf diam/width
 Ponding depth(ft)
 Tributary area(sq ft)

Cover

	0	1	2	3	4
Missing or Displaced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cracked / deteriorated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fit in Frame	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surface wear	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missing Bolts or Broken Bolts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Frame cont.

Frame

	0	1	2	3	4
Cracked / broken / deteriorated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missing Bolts or Broken Bolts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offset	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Frame Base Seal

	0	1	2	3	4
Cracked / deteriorated	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chimney (Shaft) / Grade Ring Reducer (Cone, Slab) Chamber (Wall)

☒ No Chimney (Shaft) Seal ☒ No Grade Ring
☐ No Chimney (Shaft) ☒ No Reducer (Cone, Slab)

Material Diam in Width in Depth ft

Chimney **5** **4.2**

Chamber **5** **10.3**

Chimney (Shaft)

	0	1	2	3	4
Previous rehab	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cracked	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortar missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bricks displaced or missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collapse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chamber (Wall) cont.

Chamber

	0	1	2	3	4
Cracked	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corroded, pitted,spalled	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortar missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bricks displaced or missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots Intrusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility conduit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint Offset or Seal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collapse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lift hole plugs missing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/I evidence	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bench Steps

Channel (Invert)

☒ No Bench ☒ No Steps
☒ No Channel ☒ No Common MH Partition

Surcharge Depth(ft)

Frame and Frame Seal

☐ No Frame ☐ No Frame Base Seal

Frame material **3**
 Frame bearing surf diam(in) **24**
 Frame bearing surf width(in)
 Frame bearing surf dwell(in) **1**
 Frame offset dist(in)
 Frame depth(in) **8**
 Frame seal material **39**
 Clear opening diam(in) **22**
 Clear opening width(in)

Alexandria Manhole and Lamping Inspection Form

Basin No. **FOUR MILE RUN**

Manhole N **000392SMH**

Notes / Sketch

New	N/A	Basin	Connecting MH	Flow Direction	Pipe Type	In Drop	Ex Drop	Depth	Shape	Matl	Dia																		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	FOUR MILE RUN	000391SMH	<input checked="" type="checkbox"/> In <input type="checkbox"/> Out	Storm	<input type="checkbox"/>	<input type="checkbox"/>	13.6	Circular	Corrugated Metal	57																		
Pipe Seal Condition <table border="1"> <thead> <tr> <th></th> <th>Severity</th> </tr> <tr> <th></th> <th>0 1 2 3 4</th> </tr> </thead> <tbody> <tr> <td>I/I evidence</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Mortar, "boot", or other seal</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Pipe cracked</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Roots Intrusion</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> </tbody> </table>													Severity		0 1 2 3 4	I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
	Severity																												
	0 1 2 3 4																												
I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	FOUR MILE RUN	000393SMH	<input type="checkbox"/> In <input checked="" type="checkbox"/> Out	Storm	<input type="checkbox"/>	<input type="checkbox"/>	14.5	Circular	Corrugated Metal	60																		
Pipe Seal Condition <table border="1"> <thead> <tr> <th></th> <th>Severity</th> </tr> <tr> <th></th> <th>0 1 2 3 4</th> </tr> </thead> <tbody> <tr> <td>I/I evidence</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Mortar, "boot", or other seal</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Pipe cracked</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>Roots Intrusion</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> </tbody> </table>													Severity		0 1 2 3 4	I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
	Severity																												
	0 1 2 3 4																												
I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	FOUR MILE RUN	002837ND	<input checked="" type="checkbox"/> In <input type="checkbox"/> Out	Storm	<input type="checkbox"/>	<input type="checkbox"/>	11.3	Circular	Reinforced Concrete	18																		
<table border="1"> <thead> <tr> <th>Pipe Seal Condition</th> <th>Severity</th> <th>Lamping Observations</th> </tr> <tr> <th></th> <th>0 1 2 3 4</th> <th></th> </tr> </thead> <tbody> <tr> <td>I/I evidence</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td> SCREAM Defect Code PGEN Pipe - General Remark - <input type="text"/> </td> </tr> <tr> <td>Mortar, "boot", or other seal</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td> Distance Description: Did not attempt to find origin of line. </td> </tr> <tr> <td>Pipe cracked</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Roots Intrusion</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> <td></td> </tr> </tbody> </table>												Pipe Seal Condition	Severity	Lamping Observations		0 1 2 3 4		I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	SCREAM Defect Code PGEN Pipe - General Remark - <input type="text"/>	Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Distance Description: Did not attempt to find origin of line.	Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Pipe Seal Condition	Severity	Lamping Observations																											
	0 1 2 3 4																												
I/I evidence	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	SCREAM Defect Code PGEN Pipe - General Remark - <input type="text"/>																											
Mortar, "boot", or other seal	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Distance Description: Did not attempt to find origin of line.																											
Pipe cracked	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												
Roots Intrusion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																												



Alexandria Manhole and Lamping Inspection Form






Basin No.

FOUR MILE RUN

Manhole N

000392SMH




Photos

Photo Name	Description	PhotoType	Old Photo Name
000392SMH_Topside_20120309_5970.JPG		Topside	0936111J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		
000392SMH_Cover_20120309_5971.JPG		Cover	0936151J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		
000392SMH_Frame_20120309_5972.JPG		Frame	0936191J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		
000392SMH_Chimney-Shaft_20120309_5973.J		Chimney-Shaft	0936271J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		
000392SMH_Chimney-Shaft_20120309_5974.J		Chimney-Shaft	0936441J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		
000392SMH_General_20120309_5975.JPG	SIZE OF INCOMING PIPE FROM 002837ND	General	0938141J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		
000392SMH_General_20120309_5976.JPG	INCOMING PIPE FROM 002837ND	General	0938191J.JPG
	L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe		



Alexandria Manhole and Lamping Inspection Form

Basin No. **FOUR MILE RUN** Manhole N **000392SMH**

000392SMH_General_20120309_5977.JPG	INCOMING PIPE FROM 002837ND	General	0938311J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_General_20120309_5978.JPG	INCOMING PIPE FROM 002837ND	General	0938411J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_Chamber_20120309_5979.JPG		Chamber	0938541J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_General_20120309_5980.JPG	SIZE OF INCOMING PIPE FROM 000391SMH	General	0939361J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_General_20120309_5981.JPG	INCOMING PIPE FROM 000391SMH	General	0939581J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_General_20120309_5982.JPG	INCOMING PIPE FROM 000391SMH	General	0940431J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_General_20120309_5983.JPG	INCOMING PIPE FROM 000391SMH	General	0941031J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			
000392SMH_General_20120309_5984.JPG	SIZE OF OUTGOING PIPE TO 000393SMH	General	0941431J.JPG
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe			
			



Alexandria Manhole and Lamping Inspection Form

Basin No.

FOUR MILE RUN

Manhole N

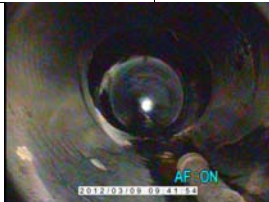
000392SMH

000392SMH_General_20120309_5985.JPG

OUTGOING PIPE TO 000393SMH

General

0941541J.JPG



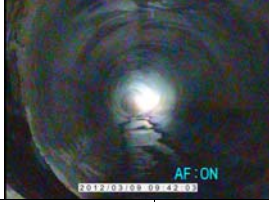
L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe

000392SMH_General_20120309_5986.JPG

OUTGOING PIPE TO 000393SMH

General

0942031J.JPG



L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe

000392SMH_General_20120309_5987.JPG

OUTGOING PIPE TO 000393SMH

General

0942101J.JPG



L:\PROJECTS\City of Alexandria\125129 - Four Shed Survey and Modeling\VPS Inspe




APPENDIX D

IMAGES OF 6-INCH PIPE APPARATUS INSIDE 57-INCH STORM MAIN

N. BEAUREGARD ST.
FROM: 000391SMH
TO: 000392SMH

0119.9' 07/06/12



Looking from
000392SMH
towards
000393SMH.

AF:ON

2012/03/09 09:41:54